

Serial No. 09/779,113
Law Offices of Natan Epstein, Attorney Docket R199-E
Transmitted by facsimile to (703) 872-9306 on August 2, 2004

REMARKS

In response to the Claim Objections, Claims 1, 13, 18-20, 24, 32, 33, 37 and 39 have been partially amended in accordance with the Examiner's requirement, and the objections to these claims are believed to be overcome. The exception to full compliance with the Examiner's requirement is that the terms "the live person" have not been deleted in the several claims as required by the Examiner. Reconsideration and withdrawal of this requirement is respectfully requested. The taking of biometric data from the live person of the card user as opposed to biometric data otherwise derived from the card user is significant to the claimed invention. Biometric data of the card user can, in principle, be derived from sources other than the card user's living physical body. However, it is that living body which is being identified in this invention. For this reason, it is believed that the objected to wording is proper in the claims.

In response to the Rejection under 35 USC 112 of claims 15, 19, 21 and 35, the claims have been amended to delete the reference to "DeLand enabled scanner/card reader". While the objected to wording could be replaced with equivalent functional language, on further consideration it is believed that the wording is not necessary to the claims and the claim structure is simplified by its deletion.

Response to the 35 USC 103 Rejection

Claims 1-7, 10, 11 and 22-40 have been rejected under 35 USC 103 (a) as unpatentable over Goldman '936 in view of Indeck et al '462.

The Examiner points out that the primary reference Goldman teaches the concept of recording uniqueness characteristics of a card onto a magnetic stripe 18 of the card. The Examiner also notes that Goldman lacks the teaching of a second reference data element representative of a biometric aspect of the card holder. The Examiner relies on the secondary Indeck reference as teaching the use of a secondary security check in the form of a human fingerprint at Column 8, Lines 30-35. The Examiner then concludes that *"utilizing a biometric aspect to be stored on the magnetic stripe would have been beneficial for providing unique and distinctive identification of the card holder. Therefore, it would have been obvious at the time the invention was made, to modify the teachings of Goldman with the aforementioned teaching of Indeck."*

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Indeck mentions several uniqueness characteristics, including a human fingerprint, for use as a secondary security check in conjunction with a magnetic strip signature. Indeck also teaches the storage of the magnetic strip signature on the card's magnetic strip. However, Indeck does not teach how the "secondary security check" is to be implemented or used. Specifically, Indeck does not teach that the secondary security check is to be scanned and digitized, nor that it is stored on the magnetic strip of the card. The Examiner relies on Goldman to provide this teaching. As best understood, the Examiner's proposed combination would involve replacing the ID picture 17 of the card C in Goldman with a fingerprint image applied to the card C, scanning the fingerprint image, storing the fingerprint image scan on the card's magnetic strip as taught by Goldman, and also storing a magnetic signature on the magnetic strip as taught by Indeck, thereby providing first and second uniqueness characteristics stored on the card.¹

Issue is respectfully taken with the Examiner's position. Firstly, Goldman does not store a biometric aspect on the magnetic card, even if a fingerprint were placed on the card C of Goldman. Secondly, there is no incentive for one of ordinary skill in the art to combine Goldman and Indeck.

I) Goldman does not store a biometric

The Goldman teaching is limited to optically scanning the translucency of the card material over some portion of the card and storing the scanned data on the card's magnetic stripe. By its express terms, the object of the Goldman method is to verify the composition of

¹ The secondary security checks specified by Indeck such as a picture ID, human fingerprint, or hologram are all known methodologies used as security checks. Pass cards bearing a picture ID, for example, are disclosed by the Goldman reference. Other cards imprinted with a human fingerprint are also known, for example, passport documents and the like. Holograms, as mentioned by Indeck, are currently imprinted on credit cards and many other items, including driver licenses, currency and other documents. The plain meaning of the Indeck reference suggests no more than the combination of such conventional secondary security checks with the stored magnetic fingerprint of a particular pass card, that is, by printing these secondary security checks in the card. This interpretation is supported by the fact that the use of a hologram is suggested as one of the possible secondary security checks. A hologram is valuable as a security check because it is relatively difficult to counterfeit unless a hologram is made and applied by means of specialized equipment it is readily evident as a counterfeit by simple visual examination of the document. The very purpose of a hologram is to provide a visual indication of authenticity. It makes no sense to scan and store a hologram on a pass card.

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the substance or material of which the card C is made. Translucency is affected not only by information or images printed on the face of the card C, but also by variations in the card's composition such as fluctuations in thickness, imperfections and impurities in the material, as well as any printing on the reverse side of the card. That is, translucency scanning yields a composite of all features affecting transmission of light through the card C at any particular point. This composite signal may, or may not, faithfully represent an image printed on the face of the card, depending on the uniformity of the card's substance and the absence of any features or printing on the reverse side of the card.

For this reason, placing a fingerprint on Goldman's card C in lieu of ID picture 17 would not yield a digitized scan of the fingerprint which could be used as a reference since the scan would integrate the fingerprint image with other translucency features of the card.

Ultimately, Goldman only seeks to authenticate the substance and printing of the card against fraudulent alteration. The translucency scanning of Goldman does nothing to facilitate or improve verification of the identity of a card user presenting the card. The card user's identity must still be verified visually against a picture printed on the card C, or, in the Examiner's proposed modification, checking a fingerprint printed on the card against a fingerprint obtained from the card user as a separate step independently of the digital information stored on the card's magnetic stripe.

Furthermore, Goldman teaches a simple linear translucency scan of some portion of the card. If the card were to include a fingerprint image, as proposed by the Examiner, Goldman would take a straight-line scan across the fingerprint image. Assuming for purposes of argument only that the substance of the card could be made perfectly homogenous so that translucency is determined only by the fingerprint image, the resulting linear scan could not be compared with any reliability against a live fingerprint taken from a card user. In part, this is because the live fingerprint is randomly oriented and the linear scan would have to be tested in a nearly infinite number of locations and orientations against the live fingerprint in an attempt to make a match.

Biometric fingerprint data is not the same as a linear digital scan taken across a fingerprint image. A fingerprint biometric, as explained in the original specification, consists of digital data derived by extracting a number of predetermined features from multiple

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scanned images of a person's fingerprint. That is, the biometric signature is not a mere image scan such as disclosed by the Goldman reference, but rather the digital extraction of certain features which can be matched against randomly oriented live fingerprints subsequently taken at card transaction site from the live card user presenting the card.

The intended purpose of Goldman's security scan and the intended purpose of a biometric are fundamentally different.

Goldman scans and stores translucency data of a printed portion of the card for purposes of verifying that the printed portion has not been altered.

Applicant's stored biometric is not derived from any printed portion of the card, as in Goldman, and in fact such printing is not necessary to applicant's invention. Rather, the stored biometric data in Applicant's invention is derived independently of the card, such as by live biometric scanning of the authorized card user's person at the time the card is first issued.

As already explained, the translucency scan stored by Goldman cannot be used to verify the identity of a person presenting the card. In the Examiner's proposed combination this verification would still have to be done as a separate step by comparing the fingerprint image printed on the card against a fingerprint obtained from the card user. The stored translucency scan is not a biometric which can be compared to a live fingerprint, for example.

In Applicant's invention, by contrast, the stored reference biometric is tested directly against a live biometric element acquired from a person presenting the card at a transaction site.

Applicant's Claims include the step of acquiring a live biometric data element in digital form at a transaction site and the further step of comparing the live acquired biometric data element against the stored digital biometric reference data. No such process is possible in the Examiner's proposed combination of references.

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II) No Motivation to Combine Goldman and Indeck

The combination advanced by the Examiner has been shown to fall short of the claimed invention. However, the Examiner's proposed combination is unsupported by any teaching or motivation in the prior art and constitutes an attempt at hindsight reconstruction of Applicant's claimed invention through application of the Applicant's own teaching to the prior art.

It is evident from the preceding remarks that both Goldman and Indeck have similar objectives, namely the preservation of the physical card against fraudulent alteration. Indeck does this by reading and storing microstructure of the card's magnetic strip. Goldman accomplishes its objective by reading and storing translucency characteristic which are determined, at least in part, by microstructure of the card's materials and printing. Both methods are considered highly reliable by the respective inventors and their combination seems largely redundant. Any marginal increase in reliability that might be gained by such combination would be at substantial expense and complexity of the system, rendering dubious the alleged benefit of the Examiner's proposed modification. Absent any express teaching or significant motivation in the prior art, the Examiner's proposed combination must be deemed to constitute an impermissible reconstruction of the prior art based upon this applicant's own teachings.

Applicant's Claims Patentably Distinguish Over the Prior Art

Independent Claims 1, 22, 24, 32, 37 and 39 have been rejected over the combination of Goldman and Indeck et al. These Claims are allowable over the cited art for reasons set forth in the preceding and following remarks.

Claim 1 has been amended to make clear that the first and second data elements are digitized and are electronically compared against corresponding digitized live data elements which are taken at a transaction site from the card and from the live person of the card user

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presenting the card. This limitation distinguishes from the art of record in that Goldman v Indeck does not suggest, and in fact is incapable of electronically comparing both stored digitized card microstructure and stored digitized biometric data against live biometric and live card microstructure data taken at a card transaction site. In particular, the now claimed electronic acquisition of live biometric data from the live person of the card user physically present at the transaction site enables the reliable electronic comparison and verification of personal identity against the stored biometric reference data. Biometric verification of personal identity is synergistically coupled with card authentication to obtain a level of security not available in the cited art. This electronic connection of an electronically authenticated card to the biometrically identified living body of a person physically present at the card transaction site is neither taught nor suggested by the prior art of record.

Claim 22 has been amended to make clear that both the card authenticating reference data element and the second reference data element are digitized, thereby to distinguish from imprinted fingerprints used in prior art identification cards. The claim has also been amended to specify that the second reference data element is a biometric element taken by electronically scanning anatomy of an authorized card user. No cited art suggests the storage of electronically scanned biometric data in combination with card authenticating data on a storage medium of a card.

Claim 24 has not been amended and is believed to be allowable as pending. As discussed in detail above, no combination of Goldman and Indeck teaches the storage of electronically scanned biometric data in combination with card authenticating data on a storage medium of a card combined with the subsequent electronic verification of the stored data against live card microstructure data and electronically scanned biometric data acquired from the live person of a card user at a card transaction site.

Claim 32 has been amended to specify that the first and second reference data elements are both digital, and that the biometric second reference data element is acquired by electronic scanning of anatomy of a live person of the authorized card user including digital extraction and encoding of biometric features of the anatomy. As already explained,

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the cited art nowhere suggests the storage of biometric data electronically scanned from a live person in combination with card authenticating data on a storage medium of a card. Furthermore, as also discussed, there is no basis in the prior art for the examiner's combination of the Goldman and Indeck references and consequently, there is no prior art suggestion of on card storage of two digital signatures, one useful for authentication of the card the other for electronic authentication of the card user's physical person. Claim 32 is further amended to specify electronic verification by digital comparison of both first and second reference elements against corresponding live reference elements. This synergetic electronic verification of both card and card user identify as now claimed patentably distinguishes over the art of record.

Claim 37 as now amended patentably distinguishes over Goldman v Indeck et al. in that, among other distinctions, the stored second reference element is obtained by electronic scanning of live anatomy of an authorized card user, the live data element is likewise obtained by electronic scanning of live anatomy of a card user presenting the card at a card transaction site, and the two elements are electronically compared. In addition, as explained, the combination of Goldman and Indeck et al. relied upon by the Examiner in rejecting the claims is unsupported by any teaching or motivation found in the prior art.

Claim 39 is a detailed claim which incorporates features discussed in the independent claims detailed above and the claim as now pending and without amendment patentably distinguishes over the cited art for reasons already explained in connection with those independent claims.

The claims dependent upon the just listed independent claims are also patentable over the references whether taken singly or in combination, and are allowable with their corresponding base claims.

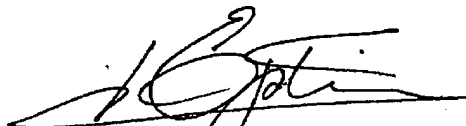
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Conclusion

Applicant's claimed invention enables reliable, automated, electronic verification of both card authenticity and personal identity of a card user at a transaction site. The combination proposed by the Examiner fails to teach or suggest this capability. Only card authentication can be automated with the Examiner's combination.

Review and favorable reconsideration of the application in light of this amendment and accompanying remarks is respectfully requested. All claims remaining in the application are now believed to be in condition for allowance and such action is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Natan Epstein', is written over a horizontal line.

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